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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,605	04/06/2001	Jie Tang	17564-145	2181

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BOSTON, MA 02111

EXAMINER
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WYSZOMIERSKI, GEORGE P

ART UNIT	PAPER NUMBER
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1742

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DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/827,605	GOEHRING ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	George P Wyszomierski	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)  Responsive to communication(s) filed on 12/11/02 and 2/3/03.

2a)  This action is FINAL. 2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)  Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 1-31 is/are allowed.

6)  Claim(s) 32-34 is/are rejected.

7)  Claim(s) 35 and 36 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

1. The Office acknowledges receipt of the supplemental Declaration by inventors Hess and Goehring, the letter establishing the right of Assignee to consent, the consent of Assignee, and the offer by Assignee to surrender, all filed December 11, 2002.

2. The copy of the specification on file in this application is objected to because it does not reflect the language changed by the Certificate of Correction issued September 7, 1999; see MPEP section 1411.01. Applicant is advised to correct this omission in the next communication in this Application.

3. Claim 33 is objected to because of the following informality. In line 3 of this claim, the word "the" should read --a-. Appropriate correction is required.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (U.S. Patent 4,419,303).

Anderson discloses a process which includes providing a melt of liquid sodium, applying vibrations thereto (see Anderson column 6, line 9), and using a pressure differential to force the liquid through an orifice into a medium maintained at well below 0°C (see Anderson column 8, lines 36-55). The liquid then solidifies, preferably into substantially uniformly sized spheres (see

Anderson column 6, lines 46-56). Therefore, Anderson discloses a process substantially in accord with that of instant claim 32. With respect to instant claims 33 and 34, the cooling environment of Anderson is preferably cooled helium gas which, being much cooler than the liquid material, would inherently (by the basic laws of thermodynamics) absorb at least some heat of fusion from the formed spheres.

Anderson does not specify forming a "heat gradient" as required by the instant claims. However, the cooled helium used in the Anderson process is kept at a temperature far below ambient. Therefore, the temperature of the helium would vary, with the temperature at a point located near to the source of cooling (liquid nitrogen in the case of Anderson) being the coolest and the temperature located far from the cooling source being relatively higher. Thus, one of ordinary skill in the art would assume that a heat gradient is present in the process as disclosed by Anderson. Consequently, a *prima facie* case of obviousness is established between the disclosure of Anderson and the process as presently claimed.

6. In the response filed December 11, 2002 (which relates to the claims as currently presented), Applicant alleges that the liquid nitrogen of Anderson does not create a temperature gradient and that Anderson does not teach, disclose, or suggest the possibility of forming a heat gradient to one of ordinary skill in the art. Applicant's arguments have been carefully considered, but are not persuasive of patentability because the examiner's position is that the creation of the heat gradient is a natural consequence of the fact that the liquid nitrogen and the cooled helium of Anderson are kept at temperatures which are well below ambient. By the laws of thermodynamics, the temperature of such a system would tend to stabilize at a point somewhere between the ambient temperature outside of the system and the much cooler temperature of the cooled helium. It is only by forcible cooling of the helium that the lower

temperature can be maintained, and the actual temperature at any given point in the system would vary, with the temperature being lower at a point near to the source of forced cooling than it is at a point further from that source. Therefore, a heat gradient would be present in the process of Anderson. Applicant suggests that this gradient "may or may not exist at any given time during operation of the Anderson process" but has provided no scenario in which it would not exist.

7. The examiner agrees with Applicant that the prior art does not disclose or suggest the use of an environment containing both a first heat transfer medium and a second heat transfer medium in a process as defined by independent claims 1, 16, or 31. Thus, claims 1-31 are allowable over the prior art of record, and claims 35 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. It is noted that the original ribboned copy of the patent that is the subject of this reissue application has not been surrendered. Either the original patent, or a statement addressing the loss or inaccessibility of the original patent must be received before this reissue application can be allowed.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (703) 308-2531. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for this Group is (703) 872-9310 for all correspondence except for After Final amendments in which case the Fax number is (703) 872-9311. The Right fax number for this examiner is (703) 872-9039. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER

GPW  
March 21, 2003